

Abstract

A method for the production of foamable or foamed metal pellets, parts and panels. The method comprises the steps of: i) providing a mixture of a metal alloy powder with a foaming agent powder, ii) pre-compacting the mixture of step i); iii) heating the pre-compacted mixture of step ii) to a temperature below a decomposition temperature of the foaming and at which permanent bonding of the particles occurs v) hot compacting the body for producing a compacted body made of a metal matrix embedding the foaming agent; and vi) reducing the compacted body into metal fragments and thereby obtaining dense foamable metal chips. A method for the production of a foam metal using a closed volume metal shell is also disclosed. The method comprises the steps of: a) providing metal pieces and reducing said metal pieces into smaller metal particles; b) mixing the metal particles with an additive having a decomposition temperature that is greater than a solidus temperature of said metal particles; c) pouring the mixture of step b) into a closed volume metal shell having a given thickness and providing the metal shell with at least one passage for gases to escape; d) reducing the thickness of the metal shell by applying pressure; e) heating the metal shell to a temperature above said solidus temperature of the metal particles and below said decomposition temperature of the additive, and immediately applying pressure on the metal shell sufficient to compress the metal particles and to create micro shear conditions between the metal particles so as to obtain a dense metal product.